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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/597,667

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Bernhard Gleich

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PHILIPS INTELLECTUAL PROPERTY & STANDARDS
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EXAMINER

LEE, SHUN K

ART UNIT

PAPER NUMBER

2884

MAIL DATE

DELIVERY MODE

08/19/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/597,667	Applicant(s) GLEICH, BERNHARD	
	Examiner Shun Lee	Art Unit 2884	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>20060803</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

National Stage Application

Information Disclosure Statement

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, “the list may not be incorporated into the specification but must be submitted in a separate paper.” Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

2. The listing of references in the Search Report is not considered to be an information disclosure statement (IDS) complying with 37 CFR 1.98. 37 CFR 1.98(a)(2) requires a legible copy of: (1) each foreign patent; (2) each publication or that portion which caused it to be listed; (3) for each cited pending U.S. application, the application specification including claims, and any drawing of the application, or that portion of the application which caused it to be listed including any claims directed to that portion, unless the cited pending U.S. application is stored in the Image File Wrapper (IFW) system; and (4) all other information, or that portion which caused it to be listed. In addition, each IDS must include a list of all patents, publications, applications, or other information submitted for consideration by the Office (see 37 CFR 1.98(a)(1) and (b)), and MPEP § 609.04(a), subsection I. states, “the list ... must be submitted on a separate paper.” Therefore, the references cited in the Search Report have not been considered. Applicant is advised that the date of submission of any item of information

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or any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the IDS, including all “statement” requirements of 37 CFR 1.97(e). See MPEP § 609.05(a).

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 4 and 6-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 4, 6, and 7, the phrase “preferably” renders the claims indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention.

Regarding claim 8, the phrase “especially” renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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6. Claims 1, 2, and 4-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Schiller *et al.* (Subwavelength optical magnetic-resonance imaging, Journal of the Optical Society of America A, Vol. 9, no. 5 (May 1992), pp. 683-699).

In regard to claim **1**, Schiller *et al.* disclose a microscope arrangement for imaging a sample (*i.e.*, “ ... OMRI microscopy of condensed matter ... ”; pg. 684) that contains a magnetically and/or electrically sensitive fluorescent marker (*e.g.*, “ ... centers ... ”; pg. 686), comprising a fluorescence microscope for exciting and imaging fluorescence radiation (*e.g.*, “ ... detecting ... the fluorescence induced by a probe-laser field ... ”; pg. 688) from the sample; a field generator for generating an inhomogeneous magnetic and/or inhomogeneous electric field (*i.e.*, “ ... basic components of a gradient imaging system are an inhomogeneous external electric or magnetic field (gradient field) ... ”; pg. 683) in the sample.

In regard to claim **2** which is dependent on claim 1, Schiller *et al.* also disclose that is designed to alter the inhomogeneous field within the sample in a defined manner (*e.g.*, “ ... reorienting the field gradient or the sample to obtain projections along different axes ... ”; pg. 686).

In regard to claim **4** which is dependent on claim 1 in so far as understood, Schiller *et al.* also disclose a data processing device for image processing of the image recorded by the fluorescence microscope, the data processing device being designed to reconstruct the distribution of the fluorescent marker in the sample from the known spatial strength distribution of the inhomogeneous field during one or preferably several recordings (*e.g.*, “ ... reorienting the field gradient or the sample to obtain projections along different

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axes. ... Computation of an image of $c(r)$, characterized by resolution (pixel size) and SNRR, from the data S by using an appropriate projection reconstruction algorithm ... ”; pg. 686).

In regard to claim 5, Schiller *et al.* disclose a method of determining the spatial distribution of a magnetically and/or electrically sensitive fluorescent marker (*e.g.*, “... centers ... ”; pg. 686) in a sample, which method comprises the following steps: generation of an inhomogeneous magnetic and/or inhomogeneous electric field (*i.e.*, “... basic components of a gradient imaging system are an inhomogeneous external electric or magnetic field (gradient field) ... ”; pg. 683) in the sample; excitation of fluorescence radiation (*e.g.*, “... fluorescence induced by a probe-laser field ... ”; pg. 688) in the sample; generation by means of a fluorescence microscope of an image of the fluorescence radiation (*e.g.*, “... detecting ... the fluorescence induced by a probe-laser field ... ”; pg. 688) coming from the sample; calculation of the spatial distribution of the fluorescent marker by means of the generated image and by means of the known strength distribution of the field (*e.g.*, “... reorienting the field gradient or the sample to obtain projections along different axes. ... Computation of an image of $c(r)$, characterized by resolution (pixel size) and SNRR, from the data S by using an appropriate projection reconstruction algorithm ... ”; pg. 686).

In regard to claim 6 which is dependent on claim 5 in so far as understood, Schiller *et al.* also disclose that the inhomogeneous magnetic field (33) has a gradient of at least 10^2 T/m (*e.g.*, “... up to 30 T/cm ... ”; pg. 685).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schiller *et al.* (Subwavelength optical magnetic-resonance imaging, Journal of the Optical Society of America A, Vol. 9, no. 5 (May 1992), pp. 683-699) in view of Sprecher, Jr. (US 6,271,660).

In regard to claim 3 which is dependent on claim 1, the apparatus of Schiller *et al.* lacks an explicit description that the field generator for generating an inhomogeneous field has a first pole body of a first polarity, which on at least two opposite sides is adjacent to second pole bodies of different polarity. However, since Schiller *et al.* do not disclose and/or require a specific field generator, one having ordinary skill in the art at the time of the invention could reasonably interpret the unspecified field generator of Schiller *et al.* as any one of the known conventional field generators that did not require a detailed description. Further, Sprecher, Jr. teaches (column 3, lines 16-49) a three bar-type permanent magnets in a side by side alternating polarity configuration for producing a magnetic field gradient. It should be noted that “when a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable results”. *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398 at 416, 82 USPQ2d 1385 (2007) at 1395 (citing *United States v. Adams*, 383 U.S. 39, 40 [148 USPQ 479] (1966)). See MPEP § 2143. In this case, one of ordinary skill in the art could have substituted a known conventional field generator (e.g., a three bar-type permanent magnets) for the unspecified field generator of

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Schiller *et al.* and the results of the substitution would have been predictable. Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to provide a known conventional field generator (e.g., a first pole body of a first polarity, which on at least two opposite sides is adjacent to second pole bodies of different polarity) as the unspecified field generator of Schiller *et al.*

9. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schiller *et al.* (Subwavelength optical magnetic-resonance imaging, Journal of the Optical Society of America A, Vol. 9, no. 5 (May 1992), pp. 683-699) in view of Abrarov *et al.* (US 2002/0108890).

In regard to claim 7 which is dependent on claim 5 in so far as understood, the method of Schiller *et al.* lacks an explicit description that the inhomogeneous electric field has a gradient of at least 10^{11} V/m². However, since Schiller *et al.* do not disclose and/or require a specific field generator, one having ordinary skill in the art at the time of the invention could reasonably interpret the unspecified field generator of Schiller *et al.* as any one of the known conventional field generators that did not require a detailed description. Further, Abrarov *et al.* teach (paragraph 82) a non-homogeneous electric field generator that can generate a $>10^9$ V/m² gradient. It should be noted that “when a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable results”. *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398 at 416, 82 USPQ2d 1385 (2007) at 1395 (citing *United States v. Adams*, 383 U.S. 39, 40 [148 USPQ 479] (1966)). See MPEP § 2143. In this case, one of ordinary skill in the art could have substituted a known conventional field generator (e.g., $>10^9$ V/m²

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electric field gradient generator) for the unspecified field generator of Schiller *et al.* and the results of the substitution would have been predictable. Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to provide a known conventional field generator (e.g., $>10^9$ V/m² electric field gradient generator) as the unspecified field generator of Schiller *et al.*

10. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schiller *et al.* (Subwavelength optical magnetic-resonance imaging, Journal of the Optical Society of America A, Vol. 9, no. 5 (May 1992), pp. 683-699) in view of Gleich (US 2003/0085703).

In regard to claim 8 which is dependent on claim 5 in so far as understood, the method of Schiller *et al.* lacks an explicit description that the inhomogeneous field has a local minimum of field strength. However, since Schiller *et al.* do not disclose and/or require a specific field generator, one having ordinary skill in the art at the time of the invention could reasonably interpret the unspecified field generator of Schiller *et al.* as any one of the known conventional field generators that did not require a detailed description. Further, Gleich teaches (paragraphs 43 and 44) a non-homogeneous magnetic field generator comprising a plurality of coil pairs for generating gradient magnetic field as illustrated by the field lines 300 in Fig. 2. It should be noted that “when a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable results”. *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398 at 416, 82 USPQ2d 1385 (2007) at 1395 (citing *United States v. Adams*, 383 U.S. 39, 40 [148 USPQ 479] (1966)). See MPEP § 2143. In this case, one of ordinary skill in

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the art could have substituted a known conventional field generator (e.g., a plurality of coil pairs) for the unspecified field generator of Schiller *et al.* and the results of the substitution would have been predictable. Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to provide a known conventional field generator (e.g., a plurality of coil pairs) as the unspecified field generator of Schiller *et al.*

11. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schiller *et al.* (Subwavelength optical magnetic-resonance imaging, Journal of the Optical Society of America A, Vol. 9, no. 5 (May 1992), pp. 683-699) in view of Briggs (US 4,676,640).

In regard to claim **10** which is dependent on claim 5, the method of Schiller *et al.* lacks an explicit description that the sample is located in a solution with the fluorescent marker. However, since Schiller *et al.* do not disclose and/or require a specific sample, one having ordinary skill in the art at the time of the invention could reasonably interpret the unspecified sample of Schiller *et al.* as any one of the known conventional samples that did not require a detailed description. Further, Briggs teaches (column 6, lines 9-25) that a sample is combined with an assay reagent to provide an assay mixture containing particles where the fluorescent intensities of the particles or solution are related to the presence of the analyte. It should be noted that “when a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable results”. *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398 at 416, 82 USPQ2d 1385 (2007) at 1395 (citing *United States v. Adams*, 383 U.S. 39, 40 [148 USPQ 479]

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(1966)). See MPEP § 2143. In this case, one of ordinary skill in the art could have substituted a known conventional sample (e.g., a sample in solution with a fluorescent marker) for the unspecified sample of Schiller *et al.* and the results of the substitution would have been predictable. Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to provide a known conventional sample (e.g., a sample in solution with a fluorescent marker) as the unspecified sample of Schiller *et al.*

Double Patenting

12. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

13. Claims 5 and 8 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 6 of U.S. Patent No. 7,747,304. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims in the application define an invention that is anticipated by, or is merely an obvious variation of, an invention claimed in the patent.

Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shun Lee whose telephone number is (571) 272-2439. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/S. L./
Examiner, Art Unit 2884

**/Constantine Hannaher/
Primary Examiner, Art Unit 2884**